

# Salam Afiouni

527 West 121st Street, Manhattan, New York 10027

✉ sa4316@columbia.edu | [in linkedin.com/in/salam-afiouni](https://www.linkedin.com/in/salam-afiouni) | 🏠 Salam Afiouni

## Education

### Columbia University

New York, USA

PhD in Operations Research

Sept. 2023 - Present

- **Advisor:** Prof. Christian Kroer
- **Relevant Courses:** Algorithmic Game Theory, Optimization, Market Design, Network Games, Analysis of Algorithms, Stochastic Modeling

### American University of Beirut

Beirut, Lebanon

BE in Industrial Engineering, OR track

Aug. 2019 - May 2023

- Minor in Applied Mathematics
- Graduated with High Distinction. Cumulative GPA **4.14**
- **Relevant Courses:** Operations Research, Advanced Optimization Techniques, Numerical Computing, Numerical Linear Algebra, Discrete Events Simulation, Algorithmic Graph Theory, Data Analytics for Operations Research

## Experience

### Graduate Research Assistant

New York, USA

Coffee and Convexity Lab - Columbia University

Sept. 2023 - Present

- **Research Interests:** Game Theory, Optimization, Mechanism Design, Economics and Computation
- Specific: Equilibrium Computation, Auctions Design, Optimization over Networks, Online Learning, Market Equilibrium

### Research Assistant

Beirut, Lebanon

Control and Optimization Laboratory - American University Beirut

Oct. 2022 - Sept 2023

- Worked with Prof. Dany Abou Jaoude on the problem of distributed resource allocation over graphs with uncertainty
- Developed a distributed algorithm for fair resource allocation with improved performance under constant step-size
- **Academic areas:** Distributed Optimization, Resource Allocation

### Researcher

Remote

Adaptive Systems Laboratory - EPFL

Oct. 2022 - June 2023

- Studied the relationship between Nash equilibrium and Pareto optimal solutions for the multi-objective optimization problem
- Investigated a biologically-inspired design for the competition problem
- **Academic areas:** Min-Max Optimization, Multi-Objective Optimization

### Research Intern - EPFL Excellence in Engineering Fellowship Program

Lausanne, Switzerland

Adaptive Systems Laboratory - EPFL

July. 2022 - Sept. 2022

- Worked under the supervision of Prof. Ali H. Sayed and Dr. Flavio Pavan on the problem of Optimization Over Competing Networks
- Formulated and analyzed the local and global distributed optimization problems in the LMS setting
- **Academic areas:** Adaptive and Distributed Optimization, Game Theory

## Publications

Afiouni, S., Černý, J., Ling, C. K., & Kroer, C. (2025). Commitment to Sparse Strategies in Two-Player Games. AAAI 25 [github.com/CoffeeAndConvexity/SparseEquilibria](https://github.com/CoffeeAndConvexity/SparseEquilibria)

Colonel Blotto with Battlefield Games

Under Review

## Teaching

**IEOR 4004** Optimization Models and Methods

Fall 2025

**CSOR 4231** Analysis of Algorithms

Spring 2025

## Projects

## Columbia University

IEOR Department

- Coalition Formation in Auctions via Social Learning
- The Connection between Stable Matching and Optimal Transport

## American University of Beirut

Industrial Engineering Department

- Machine Learning for Crowdfunding Success
- Queuing System Analysis for Optimal Server Allocation at Checkouts in Spinneys Supermarket, Lebanon
- Gradient Descent Convergence Guarantee by the Stable Manifold Theorem
- Movie Recommendation System
- Cost Optimization: A Poisson Process and A Markov Chain Approach

## Honors and Awards

---

2023	<b>LebNet EiC Scholarship</b> , LebNet Program	USA
2019-2023	<b>Dean's Honor List</b> , American University of Beirut	Lebanon
2020-2023	<b>Francois Hamze Scholarship</b> , American University of Beirut	Lebanon
2022	<b>EPFL Excellence in Engineering Fellowship</b> , EPFL	Switzerland

## Service

---

2025 **Reviewer**, AAAI'26  
Present **Member of the PhD Council**, IEOR Department

## Skills

---

<b>Programming Languages</b>	Python, MATLAB, R
<b>Numerical Libraries</b>	Gurobi, CVXPY, Matplotlib, NumPy, SciPy, pandas
<b>Soft Skills</b>	Academic writing, Presentation skills, Leadership skills, Hands-on learning

## Languages

---

<b>English</b>	Professional proficiency	IELTS 8
<b>French</b>	Bilingual Proficiency	
<b>Arabic</b>	Native Proficiency	